AMENDMENTS TO THE CLAIMS

In the set of claims within the Application, please amend each claim as hereinafter indicated.

1. (Currently Amended) A safety system for a vehicle, said safety system comprising:

an occupant sensor located onboard said vehicle and operable to generate an occupant characteristic signal;

a plurality of discretized patch sensors coupled to a peripheral area of [[the]] said vehicle and ~~generating~~ operable to generate at least one collision detection signal; and

a controller coupled to said occupant sensor and said plurality of discretized patch sensors;

wherein said controller is operable to determine an occupant status in response to said occupant characteristic signal, ~~determining~~ determine a collision type in response to said at least one collision detection signal, and ~~performing~~ perform at least one countermeasure in response to said occupant status and said collision type.

2. (Currently Amended) A safety system as in claim 1, wherein said plurality of discretized patch sensors are at least partially formed of a poly-vinylidine fluoride material.

3. (Currently Amended) A safety system as in claim 1, wherein said plurality of discretized patch sensors are in a composite form.

4. (Currently Amended) A safety system as in claim 1, wherein said plurality of discretized patch sensors are coupled to a bumper of [[the]] said vehicle.

5. (Currently Amended) A safety system as in claim 1, wherein said controller comprises:

a collision contact location estimator for determining said collision type, ~~comprising~~ which includes determining a collision severity and a collision contact location ~~of the~~ on said vehicle, in response to said at least one collision detection signal; and

a coordinated device activation system for performing said at least one countermeasure in response to said collision type.

6. (Currently Amended) A safety system as in claim 5, wherein said collision contact location estimator, in determining said collision severity, ~~generates~~ is operable to generate at least one collision severity signal corresponding to said at least one collision detection signal.

7. (Currently Amended) A safety system as in claim 5, wherein said collision contact location estimator ~~determines~~ is operable to determine said collision contact location relative to said plurality of discretized patch sensors in response to values selected from at least one of a plurality of location threshold values, time synchronized comparative magnitude values, and signature values of [[said]] the collision detection signals.

8. (Currently Amended) A safety system as in claim 5, wherein said collision contact location estimator ~~determines~~ is operable to determine said collision contact location relative to said plurality of discretized patch sensors in response to at least one collision confirmation threshold value.

9. (Currently Amended) A safety system for a vehicle, said safety system comprising:

an occupant sensor located onboard said vehicle and operable to generate an occupant characteristic signal;

a plurality of collision detection sensors coupled to [[a]] the periphery of [[the]] said vehicle and ~~generating~~ operable to generate at least one collision detection signal; and

a controller coupled to said occupant sensor and said plurality of collision detection sensors and comprising[[;]] (i) a collision contact location estimator for determining a collision type, ~~comprising~~ which includes determining a collision severity and a collision contact location on [[the]] said vehicle, in response to said at least one collision detection signal[[;]], and (ii) a coordinated device activation ~~device~~ system for performing at least one countermeasure in response to said occupant characteristic signal and said collision type.

10. (Currently Amended) A safety system as in claim 9, wherein said plurality of collision detection sensors are in the form of a plurality of discretized patch sensors.

11. (Currently Amended) A safety system as in claim 9, wherein said plurality of collision detection sensors are at least partially formed of a poly-vinylidine fluoride material.

12. (Currently Amended) A safety system as in claim [[9]] 10, wherein said plurality of discretized patch sensors are in a composite form.

13. (Currently Amended) A safety system as in claim 9, wherein said plurality of collision detection sensors are non-accelerometer type sensors.

14. (Currently Amended) A safety system as in claim 9, wherein said collision contact location estimator, in determining said collision severity, ~~generates~~ is operable to generate at least one collision severity signal corresponding to said at least one collision detection signal.

15. (Currently Amended) ~~A system as in claim 9~~ A safety system for a vehicle, said safety system comprising:

a plurality of collision detection sensors coupled to the periphery of said vehicle and operable to generate at least one collision detection signal; and

a controller coupled to said plurality of collision detection sensors and comprising (i) a collision contact location estimator for determining a collision type, which includes determining a collision severity and a collision contact location on said vehicle, in response to said at least one collision detection signal, and (ii) a coordinated device activation system for performing at least one countermeasure in response to said collision type;

wherein said collision contact location estimator, in determining said collision severity, ~~generates~~ is operable to generate at least one collision severity signal corresponding to approximately $K_i V_i (1 - e^{-\tau t})$, ~~where~~ in which V_i is voltage output from the i^{th} collision detection sensor, K_i is an adaptive gain, and τ is an adjustable filter time-constant.

16. (Currently Amended) A safety system as in claim 9, wherein said collision contact location estimator ~~determines~~ is operable to determine said collision contact location relative to

said plurality of collision detection sensors in response to values selected from at least one of a plurality of location threshold values, time synchronized comparative magnitude values, and signature values of [[said]] the collision detection signals.

17. (Currently Amended) A safety system as in claim 9, wherein said collision contact location estimator ~~determines~~ is operable to determine said collision contact location relative to said plurality of collision detection sensors in response to at least one collision confirmation threshold value.

18. (Currently Amended) A safety system as in claim 17, wherein said coordinated device activation system ~~performs~~ is operable to perform said at least one ~~adaptive~~ countermeasure based on the contacted area of said vehicle when said collision confirmation threshold value is exceeded.

19. (Currently Amended) A method of ~~determining collision type and coordinating activation~~ activating [[of]] safety systems [[of]] on a vehicle, said method comprising the steps of:

sensing an occupant onboard said vehicle and generating at least one occupant characteristic signal;

detecting a collision onboard said vehicle and generating at least one collision detection signal;

determining an occupant status in response to said at least one occupant characteristic signal;

determining ~~collision~~ the severity and ~~collision~~ the contact location of said collision onboard [[the]] said vehicle in response to said at least one collision detection signal; [[and]]

determining a collision type in response to said ~~collision~~ severity and said ~~collision~~ contact location of said collision; and

generating a countermeasure signal in response to said occupant status and said collision type.

20. (Currently Amended) A method as in claim 19, said method further comprising the step of ~~performing~~ deploying at least one ~~countermeasure~~ safety device in response to said ~~collision type~~ countermeasure signal.